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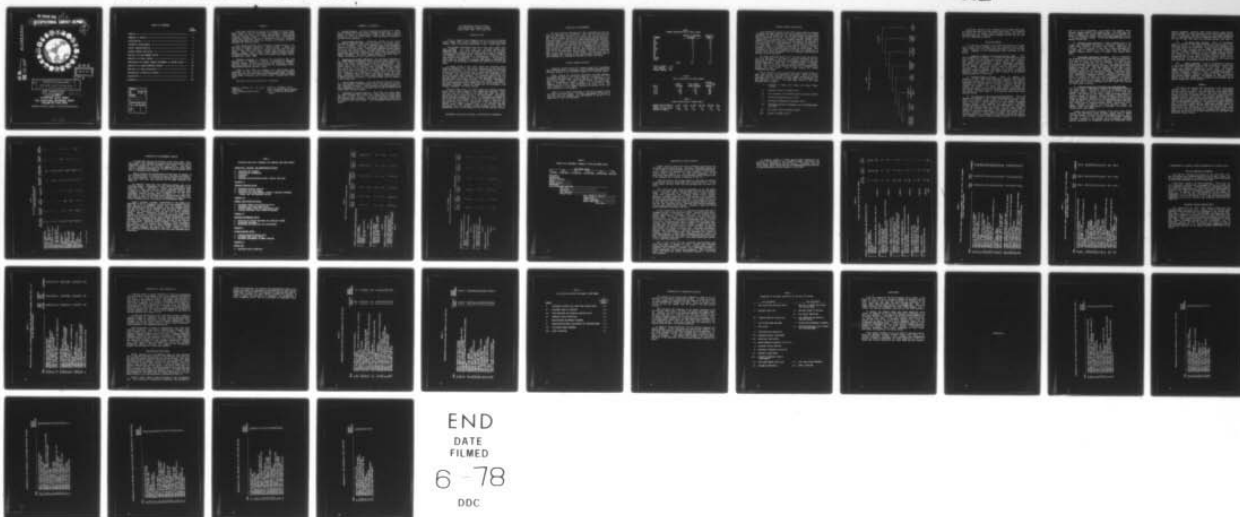
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USAF OCCUPATIONAL MEASUREMENT CENTER
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PREFACE

This report presents the results of a detailed Air Force Occupational Survey of the Fire Protection career ladder, (AFSCs 57130, 57150, 57170, and 57190). This project was directed by USAF Program Technical Training, Volume 2, dated October 1976. Authority for conducting occupational surveys is contained in AFR 35-2. Computer outputs from which this report was produced are available for use by operating and training officials.

The survey instrument was developed by Captain Loretta Y. Lee, Inventory Development Specialist. Captain Carole J. Kopala and Mr. James B. Keeth analyzed the survey data and wrote the final report. This report has been reviewed and approved by Major Walter F. Kasper, Chief, Airman Career Ladders Analysis Section, Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas, 78236.

Computer programs for analyzing the occupational data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Copies of this report are available to air staff sections, major commands, and other interested training and management personnel upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupation Survey Branch (OMY), Lackland AFB, Texas 78236.

This report has been reviewed and is approved.

JAMES A. TURNER, JR., Col, USAF
Commander
USAF Occupational Measurement
Center

WALTER E. DRISKILL, Ph.D.
Chief, Occupational Survey Branch
USAF Occupational Measurement
Center

SUMMARY OF RESULTS

1. Survey Coverage: The Fire Protection job inventory was administered during the period August through October 1977. Survey results are based on responses from 2,328 of the 5,799 incumbents assigned to the 571X0 career ladder. This represents 40 percent of the total AFSC population.

2. Career Ladder Structure: Ninety-four percent of the survey respondents comprised eight major job groups. The largest group, that of Aerospace/ Structural Firefighters and Crash/Rescuemen, contained 71 percent of the total sample and comprised the firefighting element of the career ladder. Other groups identified included deputy fire chiefs and station chiefs, training personnel, fire inspectors, extinguisher maintenance personnel, fire alarm center personnel, and supply custodians. The career ladder structure identified tends to validate the existing Air Force classification structure.

3. Experience and DAFSC Differences: By and large, incumbents in this career ladder are young 3- and 5-skill level airmen with 63 percent of the survey respondents being in their first enlistment. The primary job of these young airmen is that of fighting fires. These airmen usually serve as vehicle drivers, handline operators, hydrant men, nozzle men, turret operators, and rescuemen. As their DAFSC and time in service increases, they transition into such jobs as crew chief, instructor, fire inspector, and station chief. At the 9-skill level, incumbents tend to be either a fire chief or deputy fire chief. Thus, progression within the career ladder clearly moves from that of firefighters/drivers/rescuemen to supervisor/trainer and fire inspector to that of fire chief.

4. Career Ladder Documents: Both the AFR 39-1 Specialty Descriptions and Specialty Training Standard (STS) were found to be excellent supporting documents. Both documents accurately described the tasks performed by skill level groups and the jobs identified in the career ladder structure analysis.

5. Comparison to Previous Surveys: Since 1968, this career ladder has been surveyed three times, with highly similar findings being reported in all three surveys. The job structure of the career ladder has remained almost identical in each survey, indicating a high degree of stability in this career ladder. Career progression trends were also similar.

OCCUPATIONAL SURVEY REPORT
FIRE PROTECTION CAREER LADDER
AFSCs 57130, 57150, 57170, AND 57190

INTRODUCTION

This is a report of an occupational survey of the Fire Protection career ladder (AFSC 571X0) completed by the Occupational Survey Branch, USAF Occupational Measurement Center, during April 1978.

Two previous occupational surveys of this career ladder have been published. The first study was conducted during April-September 1968. The survey instrument was USAF Job Inventory AFPT 90-571-802, consisting of 324 tasks grouped under 13 duties and a background information section consisting of 132 history variables. The inventory was administered to approximately 30 percent of the total assigned 571X0 population, or 2,466 respondents. The preliminary report that was published in September 1968 primarily addressed the Duty AFSC job descriptions and differences between the various skill levels.

A second survey of this career ladder was conducted during December 1971-March 1972. The survey instrument for this study was USAF Job Inventory, AFPT 90-571-068, which consisted of 537 tasks grouped under 19 duty sections and a background information section of 73 items. This survey was administered to 4,116 respondents or 51 percent of career ladder manning. The published report of June 1972 not only looked at skill level job descriptions and differences, but also discussed the career ladder structure, task difficulty, comparison of survey data to career ladder documents, and training. In addition, the report addressed several problems facing the career ladder such as multi-story buildings, missile and missile site fire protection, crew training, equipment, and driver training.

Since the 1968 survey, the career ladder has remained relatively stable, with no major changes in the classification structure. Thus, since this was the third look at this ladder since 1968, this project was more or less a routine survey of the career ladder. The current project basically addressed four areas: (1) development and administration of the survey instrument; (2) the job structure found within the Fire Protection career ladder and how this relates to skill level and experience level groups; (3) comparisons of the job structure with current career ladder documents such as the AFR 39-1 Specialty Descriptions and the Specialty Training Standard (STS); and (4) comparisons of the current findings to both the 1968 and 1972 surveys.

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INVENTORY DEVELOPMENT

The data collection instrument for this occupational survey was USAF Job Inventory AFPT 90-571-276. The task lists from both the 1968 and 1972 studies served as the basis for the current job inventory. These previous task lists were reviewed and expanded through a thorough research of current career ladder publications and directives. From this review, a new tentative task list was developed. Inventory developers then conducted personal interviews with a total of eight fire protection personnel at Little Rock AFB, Randolph AFB, and Lackland AFB to review this tentative task list for completeness and accuracy. After making any necessary revisions, this revised task list was then sent out to 47 experienced fire protection personnel at operational bases in the field for their written review. The final task list was then compiled and consisted of 484 task statements grouped under 19 duty headings and a background information section of 89 items.

SURVEY ADMINISTRATION

During the period August 1977 through October 1977, consolidated base personnel offices in operational units worldwide administered the inventory booklets to job incumbents holding a Fire Protection DAFSC.

Table 1 reflects the percentage distribution, by major command, of assigned personnel in the career ladder as of October 1977. Also reflected is the distribution, by major command, of respondents in the final survey sample. For career ladders having over 3,000 incumbents, a representative sample is chosen so as to include all major segments of the career ladder population (see ATCR 52-22). The 2,328 respondents in the sample represents 40 percent of the total AFSC population of 5,799 members.

Tables 2 and 3 reflect distribution of the survey sample in terms of DAFSC and TAFMS groups. As shown, approximately 40 percent of each skill level was sampled, and approximately 63 percent of the sample were in their first enlistment.

TABLE 1
COMMAND REPRESENTATION OF SURVEY SAMPLE

<u>COMMAND</u>	<u>PERCENT OF PERSONNEL ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
SAC	21	21
TAC	17	19
USAFE	17	14
MAC	12	13
ATC	9	10
PACAF	6	5
AFSC	5	6
AAC	5	5
ADC	4	3
AU	1	1
USAFSS	1	2
OTHER	<u>2</u>	<u>1</u>
TOTAL	100	100

TOTAL ASSIGNED: 5,799
TOTAL SAMPLED: 2,328
PERCENT SAMPLED: 40%

TABLE 2
DAFSC DISTRIBUTION OF SURVEY SAMPLE

<u>DAFSC</u>	<u>NUMBER ASSIGNED</u>	<u>FINAL NUMBER USABLE RETURNS</u>	<u>PERCENT OF ASSIGNED SAMPLED</u>
57130	683	270	40%
57150	4,346	1,748	40%
57170	644	257	40%
57190	126	46	36%

TABLE 3
TAFMS DISTRIBUTION OF SURVEY SAMPLE

<u>MONTHS TIME IN SERVICE</u>	<u>1-48</u>	<u>49-96</u>	<u>97-144</u>	<u>145-192</u>	<u>193-240</u>	<u>241+</u>
NUMBER IN FINAL SAMPLE	1,462	349	211	130	121	51
PERCENT OF SAMPLE	63%	15%	9%	6%	5%	2%

CAREER LADDER STRUCTURE

This occupational analysis of the 571X0 career ladder is designed to identify the major types of work being performed by career ladder incumbents by examining both the job descriptions and background data of each major job group. This analysis is made possible by the Comprehensive Occupational Data Analysis Programs (CODAP) which generate a hierarchical clustering of all jobs based on the similarity of tasks performed and relative time spent. By utilizing job structure as a starting point, it is possible first to describe the job structure of the career ladder as it presently exists and to formulate an understanding of current utilization patterns within the career ladder. This information is then used to examine the accuracy and completeness of present career ladder documents (AFR 39-1 Specialty Descriptions and Specialty Training Standard).

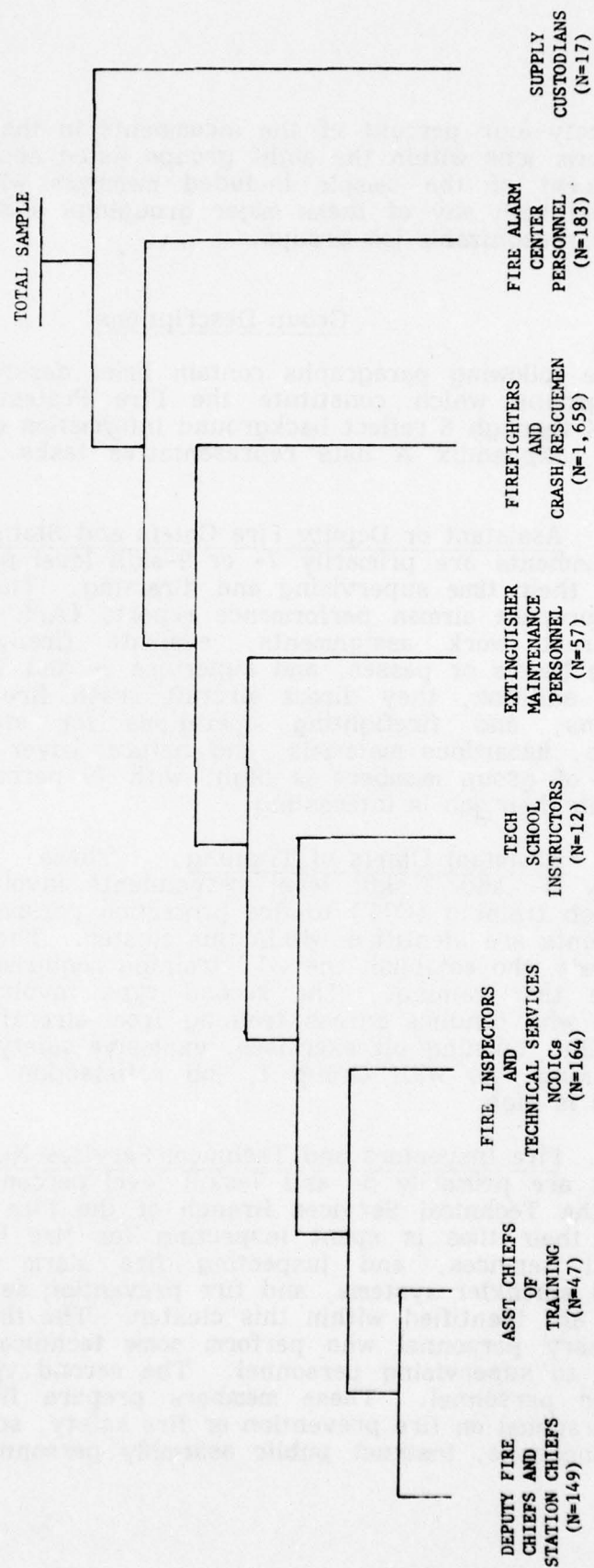
The basic identifying group used in the hierarchical job structuring is the Job Type. A job type is a group of individuals who perform many of the same tasks and spend similar amounts of time performing these tasks. When there is a substantial degree of similarity between different job types, they are grouped together in a Cluster. Finally, there are often specialized jobs that are too dissimilar to be grouped into any cluster. These unique groups are labeled Independent Job Types.

The job structure of the fire protection career ladder consists of eight major clusters and independent job types. Based on relative time spent and task similarity, the most realistic division of the jobs performed in the Fire Protection career ladder was determined to be that illustrated in Figure 1. The eight major clusters or job types identified were as follows:

- I. Assistant or Deputy Fire Chiefs and Station Chiefs (N=149)
- II. Assistant Chiefs of Training (N=47)
- III. Fire Inspectors and Technical Services NCOICs (N=164)
- IV. Technical School Instructors (N=12)
- V. Extinguisher Maintenance Personnel (N=57)
- VI. Aerospace/Structural Firefighters and Crash/Rescuemen (N=1,659)
- VII. Fire Alarm Center Personnel (N=183)
- VIII. Supply Custodians (N=17)

FIGURE 1

CAREER LADDER STRUCTURE AFS 571X0



Ninety-four percent of the incumbents in the sample were found to perform jobs within the eight groups listed above. The remaining six percent of the sample included members whose jobs were not associated with any of these major groupings and who did not form into any recognizable job groups.

Group Descriptions

The following paragraphs contain brief descriptions of the eight major groups which constitute the Fire Protection career ladder. Tables 4 through 6 reflect background information on each of the eight groups. Appendix A lists representative tasks performed by each group.

I. Assistant or Deputy Fire Chiefs and Station Chiefs. These 149 incumbents are primarily 7- or 9-skill level personnel who spend most of their time supervising and directing. They counsel subordinates, prepare airman performance reports (APR's), plan, schedule, and direct work assignments, evaluate firefighting procedures, schedule leaves or passes, and supervise 5- and 7-skill level personnel. In addition, they direct aircraft crash fire operations, rescue operations, and firefighting operations for structural, explosive materials, hazardous materials, and natural cover fires. Overall job interest of group members is high, with 79 percent of the members indicating their job is interesting.

II. Assistant Chiefs of Training. These 47 members are primarily 5- and 7-skill level respondents involved with providing on-the-job training (OJT) to fire protection personnel. Two types of respondents are identified within this cluster. The first type involves individuals who establish the OJT training requirements, and plan and schedule the training. The second type involves the actual OJT trainers who conduct egress training from aircraft or buildings, wet hose drills, burning pit exercises, explosive safety training, and first aid training. As with Group I, job satisfaction among these group members is high.

III. Fire Inspectors and Technical Services NCOICs. These 164 members are primarily 5- and 7-skill level personnel who are located within the Technical Services Branch of the Fire Department. Over half of their time is spent inspecting for fire hazards, performing technical services, and inspecting fire alarm systems, automatic installed sprinkler systems, and fire prevention devices. Three types of jobs are identified within this cluster. The first type consists of supervisory personnel who perform some technical services tasks in addition to supervising personnel. The second type consists of fire inspector personnel. These members prepare fire hazard reports, brief personnel on fire prevention or fire safety, schedule fire prevention inspections, instruct public assembly personnel in fire reporting

and use of fire extinguishers, and inspect base facilities, family housing, storage facilities, and flightline areas. The third type consists of members who inspect alarm systems such as automatic fire alarms or transmitting devices, manual fire alarm equipment, and wet or dry pipe sprinkler systems. Overall job satisfaction among cluster members is also high.

IV. Technical School Instructors. These 12 members are 5- and 7-skill level respondents who are ATC instructors assigned to the 3342nd School Squadron at Chanute AFB, Illinois. Most carry the T-prefix. Sixty-five percent of their time is spent performing such training tasks as administer or score tests, write test questions, maintain training records, charts, or graphs, and prepare lesson plans.

V. Extinguisher Maintenance Personnel. These 57 respondents are primarily 5-skill levels who work in the Technical Services Branch. Sixty-one percent are first enlistment personnel. These members have very little in common with the fire inspectors or other technical services personnel reported in Group III. They spend approximately 60 percent of their time installing, servicing, and repairing fire extinguishers around base. Only eight percent of their time is spent performing technical services or inspecting fire alarm systems, sprinkler systems, and fire prevention devices. Their tasks include servicing pressurized water extinguishers; installing safety pin display seals; maintaining extinguisher records; removing or replacing hoses, horns, or nozzles; servicing dry powder extinguishers; recharging CO2 fire extinguishers; and testing fire extinguishers. Job satisfaction is high among group members, with 68 percent finding their job interesting and 72 percent indicating that their talents and training are being utilized effectively.

VI. Aerospace/Structural Firefighters and Crash/Rescuemen. This large group of 1,659 members comprise the firefighting element of the career ladder. Seventy-six percent of the members are first enlistment personnel, with 96 percent holding a 3- or 5-skill level DAFSC. The majority of their time is spent performing general fire protection duties (18 percent), fighting aerospace vehicle fires (12 percent), maintaining equipment (11 percent), fighting structural fires (frame and masonry) (nine percent), and performing rescue operations (seven percent). Most of the cluster members indicated that they were vehicle drivers, handline operators (crash), hydrant men (structural), nozzlemen (structural), and turret operators (crash). In addition, there were small groups of rescuemen, crew chiefs, and runway barrier team members.

Common tasks performed by members of this large cluster include cleaning and maintaining station facilities; loading hoses or making hose load finishes; servicing and driving firefighting vehicles; operating hand or booster lines, nozzles, and self-contained breathing apparatus; turning on or shutting off fire hydrants; performing operator maintenance on firefighting vehicles and firefighting vehicle

mounted equipment; operating vehicle pump controls, pump engines, engine controls, and saws; operating rescue vehicle auxiliary generators and emergency lighting systems; and performing dispatching duties. While 64 percent of the respondents found their job interesting, this is lower than other fire protection groups (See Table 5).

VII. Fire Alarm Center Personnel. These 183 respondents spend 76 percent of their time performing fire alarm center duties. Sixty-nine percent of the members are in their first enlistment, with 91 percent holding the 5-skill level. Common tasks include maintaining fire station logs, operating two-way radios, dispatching firefighting vehicles, recording incoming fire calls, informing crews of locations and nature of fires, monitoring fire alarm system recording devices, and maintaining lists of closed buildings, munitions location charts, firefighting vehicle status boards, fire alarm response charts, and fire activity boards. As with the last group (Group VI), job interest was lower than other career ladder groups (See Table 5).

VIII. Supply Custodians. These 17 respondents are primarily 5- and 7-skill level members who perform an average of 22 tasks, none of which are technically related to the career field. They control supply and equipment requisitioning, issue, repair, and disposal. Common tasks include preparing requisitions for equipment or supplies, directing equipment storage or issue, conducting inventories of supplies or equipment, identifying equipment for repair or disposal, and drafting budget estimates. Job interest for this group is the highest of all career ladder groups identified in this analysis, with 88 percent finding their job interesting.

Summary

The picture that emerges from this analysis of the career ladder structure tends to validate the existing Air Force classification structure for this specialty. The large majority of incumbents within the Fire Protection ladder are young 3- and 5-skill level airmen whose primary job is that of fighting all types of fires, including structural, aerospace vehicle, natural cover, and hazardous materials fires. In addition, they are called upon to perform rescue tasks when necessary. Other young incumbents handle the jobs of fire alarm center dispatcher and fire extinguisher maintenance. Experienced incumbents who have been in the career ladder more than eight years generally handle the technical services, training, and fire chief or station chief jobs. Since this structure was also found in the last two studies of this career ladder, it is clear that this ladder has remained quite stable over the years and any resurvey of the ladder should only be undertaken when significant changes warrant.

TABLE 4
SELECTED BACKGROUND INFORMATION FOR JOB GROUPS

	ASST CHIEF/ STATION CHIEF	ASST CHIEFS TRAINING	FIRE INSPECTORS	INSTRUCTORS	EXTINGUISHER MAINTENANCE	FIREFIGHTERS/ CRASH/RESCUEMEN	FIRE ALARM CENTER	SUPPLY CUSTODIANS
AVERAGE NUMBER OF TASKS PERFORMED	111	54	88	19	49	113	39	22
AVERAGE NUMBER OF PERSONS SUPERVISED	7	1	1	2	0	1	1	0
AVERAGE TIME IN CAREER FIELD (MONTHS)	190	175	114	118	52	39	46	130
AVERAGE TOTAL ACTIVE FEDERAL MILITARY SERVICE TIME (MONTHS)	196	182	120	133	54	42	50	130
PERCENT MEMBERS IN FIRST ENLISTMENT	1%	0%	13%	8%	61%	76%	69%	6%
DAFSC 57130	-	-	1%	8%	5%	15%	6%	1%
DAFSC 57150	15%	17%	73%	33%	88%	81%	91%	59%
DAFSC 57170	57%	83%	24%	58%	7%	4%	3%	41%
DAFSC 57190	28%	-	1%	-	-	-	-	-

TABLE 5

JOB SATISFACTION INFORMATION FOR JOB GROUPS
(PERCENT MEMBERS RESPONDING)

JOB INTEREST	ASST CHIEF/ STATION CHIEF	ASST CHIEFS TRAINING	FIRE INSPECTORS	INSTRUCTORS	EXTINGUISHER MAINTENANCE	FIREFIGHTERS/ CRASH/RESCUEMEN	FIRE ALARM CENTER	SUPPLY CUSTODIANS
DULL	4	4	4	17	18	16	18	5
SO-SO	11	11	10	0	10	17	16	6
INTERESTING	7	77	79	83	68	64	63	88
NO REPLY	6	8	7	-	4	3	3	-
UTILIZATION OF TALENTS								
NOT AT ALL OR VERY LITTLE	7	9	7	17	26	31	31	18
FAIRLY WELL OR BETTER	89	91	90	83	72	68	69	82
NO REPLY	4	-	3	-	2	1	-	-
UTILIZATION OF TRAINING								
NOT AT ALL OR VERY LITTLE	9	2	7	17	28	22	30	29
FAIRLY WELL OR BETTER	87	92	91	83	72	77	67	71
NO REPLY	4	6	2	-	-	1	3	-
REENLISTMENT INTENTIONS								
NO, OR PROBABLY NO	32	28	30	0	37	60	51	6
YES, OR PROBABLY YES	63	70	70	100	61	38	48	94
NO REPLY	5	2	-	-	2	2	1	-

TABLE 6

WORK CENTER OR FUNCTION CURRENTLY ASSIGNED
(PERCENT MEMBERS RESPONDING)

	ASST CHIEF/ STATION CHIEF	ASST CHIEFS TRAINING	FIRE INSPECTORS	INSTRUCTORS	EXTINGUISHER MAINTENANCE	FIREFIGHTERS/ CRASH/RESCUEN	FIRE ALARM CENTER	SUPPLY CUSTODIANS
ASSISTANT OR DEPUTY CHIEF	69	36	12	-	-	-	-	6
CREW CHIEF, AEROSPACE FIRE								
FIGHTING VEHICLE	12	6	-	-	9	28	3	12
CREW CHIEF, CRASH RESCUE VEHICLE	9	-	-	-	5	13	-	-
CREW CHIEF, STRUCTURAL FIRE								
FIGHTING VEHICLE	13	4	-	-	4	19	-	-
DRIVER, AEROSPACE FIRE FIGHTING								
VEHICLE	5	-	-	-	14	45	-	-
DRIVER, CRASH RESCUE VEHICLE	5	-	-	-	9	23	-	-
DRIVER, RAMP PATROL VEHICLE	4	-	-	-	14	43	-	-
DRIVER, STRUCTURAL FIRE FIGHTING								
VEHICLE	4	-	-	-	9	37	-	-
DRIVER, TANKER VEHICLE	4	-	-	-	9	39	3	-
FIRE ALARM CENTER	6	-	-	-	12	28	94	6
FIRE CHIEF	15	4	-	-	-	-	-	-
FIRE EXTINGUISHER REPAIR	4	4	12	-	95	5	-	-
FIRE INSPECTOR	8	-	85	-	9	4	-	6
FIRE OPERATOR (CRASH)	4	-	-	-	7	45	4	-
HYDRANT MAN (STRUCTURAL)	4	-	-	-	7	47	3	-
INSTRUCTOR	14	34	11	83	10	16	5	-
NCOIC TECHNICAL SERVICES	3	-	16	-	-	-	-	-
NOZZLE MAN (STRUCTURAL)	4	-	-	-	9	49	3	-
RESCUEMAN	8	4	-	-	9	28	-	-
STATION CHIEF	26	4	-	-	-	10	-	6
SUPPLY CUSTODIAN	12	15	6	-	-	-	-	94
TRAINING NCO	11	89	-	8	10	-	-	-
TURRET OPERATOR (CRASH)	4	-	-	-	9	42	3	-
OTHER	-	-	4	17	-	-	-	-

* - = Less than 3 percent

ANALYSIS OF ENLISTMENT GROUPS

In conjunction with the job structure of the career ladder, enlistment groups were examined for general trends or patterns of career progression within the Fire Protection career ladder. This data is useful in evaluating the accuracy and adequacy of the career ladder AFR 39-1 Specialty Descriptions and Specialty Training Standard (STS) used in classification and training.

Table 8 presents the average amount of time spent by members of each enlistment group on tasks within each of the duty areas listed in the survey inventory. For clarity and brevity within this narrative, these duty areas have been grouped into six major categories (See Table 7).

As expected, there were clear differences between each of the enlistment groups. Respondents in each successive enlistment group spent more time on supervisory, training, and administrative tasks (Category I) while less time was spent performing technical tasks (Categories III through VI). The noted exception was the time spent performing technical services tasks (Category II). In this case, respondents in the third enlistment group (97-144 months) spent much more time on tasks in this area than respondents in the first and second enlistment groups (1-48 months and 49-96 months AFMS).

Table 9 provides a graphic representation of the primary jobs performed by survey respondents in each of the six enlistment groups. While jobs such as nozzleman, hydrant man, and handline operator were primarily performed by respondents in the first enlistment group, the jobs of driver, turret operator, and reserveman were primarily performed by respondents in both the first and second enlistment groups. However, respondents performing as a fire extinguisher repairman were found in each of the first five enlistment groups. The jobs of crew chief and instructor were primarily performed by second through fourth enlistment group members, while second through fifth enlistment group respondents primarily had the jobs of fire inspector and station chief. During the fourth enlistment, a whole new group of jobs appears. Fourth through sixth enlistment group respondents primarily performed the jobs of NCOIC Technical Services, training NCO, supply custodian, and Deputy Fire Chief. Finally, the job of Fire Chief was performed primarily by fifth and sixth enlistment group respondents.

TABLE 7

CATEGORIES UNDER WHICH INVENTORY DUTY HEADINGS HAVE BEEN GROUPED

SUPERVISORY, TRAINING, AND ADMINISTRATIVE DUTIES

- A. ORGANIZING AND PLANNING
- B. DIRECTING AND IMPLEMENTING
- C. EVALUATING
- D. TRAINING
- H. PREPARING AND MAINTAINING RECORDS, REPORTS, AND FILES

CATEGORY II:

TECHNICAL SERVICES DUTIES

- R. PERFORMING TECHNICAL SERVICES
- E. INSPECTING FOR FIRE HAZARDS
- G. INSPECTING FIRE ALARM SYSTEMS, AUTOMATIC INSTALLED SPRINKLER SYSTEMS, AND FIRE PREVENTION DEVICES

CATEGORY III:

GENERAL FIRE PROTECTION DUTIES

- F. PERFORMING GENERAL FIRE PROTECTION DUTIES
- I. PERFORMING FIRE ALARM CENTER DUTIES
- J. FIGHTING NATURAL COVER AND MISCELLANEOUS FIRES
- K. FIGHTING STRUCTURAL FIRES (FRAME AND MASONRY)

CATEGORY IV:

EQUIPMENT MAINTENANCE DUTIES

- N. SERVICING AND TESTING EQUIPMENT AND INSTALLED SYSTEMS
- O. MAINTAINING EQUIPMENT
- P. MAINTAINING AND REPAIRING FIRE EXTINGUISHERS

CATEGORY V:

AIRCRAFT-RELATED DUTIES

- L. FIGHTING AEROSPACE VEHICLE FIRES
- Q. PERFORMING RAMP PATROL DUTIES
- S. PERFORMING MAINTENANCE ON RUNWAY BARRIERS

CATEGORY VI:

RESCUE DUTY

- M. PERFORMING RESCUE OPERATIONS

TABLE 8
PERCENT TIME SPENT ON DUTIES BY ENLISTMENT GROUPS

	ENLISTMENT GROUPS					
	1st 1-48 MOS (N=1462)	2nd 49-96 MOS (N=349)	3rd 97-144 MOS (N=211)	4th 145-192 MOS (N=130)	5th 193-240 MOS (N=121)	6th 240+ MOS (N=51)
<u>CATEGORY I: SUPERVISORY, TRAINING, AND ADMINISTRATIVE</u>						
A. ORGANIZING AND PLANNING	2	5	5	9	12	17
B. DIRECTING AND IMPLEMENTING	2	9	11	17	23	28
C. EVALUATING	-	2	3	5	9	13
D. TRAINING	2	7	11	15	16	13
H. PREPARING AND MAINTAINING RECORDS, REPORTS, AND FILES	1	2	3	4	4	4
SUBTOTAL	7	25	33	50	64	75
<u>CATEGORY II: TECHNICAL SERVICES DUTIES</u>						
R. PERFORMING TECHNICAL SERVICES	1	3	6	6	5	5
E. INSPECTING FOR FIRE HAZARDS	3	6	10	8	8	8
G. INSPECTING FIRE ALARM SYSTEMS, AUTOMATIC INSTALLED SPRINKLER SYSTEMS, AND FIRE PREVENTION DEVICES	2	3	5	3	3	3
SUBTOTAL	6	12	21	17	16	16
<u>CATEGORY III: GENERAL FIRE PROTECTION DUTIES</u>						
F. PERFORMING GENERAL FIRE PROTECTION DUTIES	17	10	7	5	3	1
I. PERFORMING FIRE ALARM CENTER DUTIES	15	11	8	6	4	1
J. FIGHTING NATURAL COVER AND MISCELLANEOUS FIRES	5	3	2	2	1	1
K. FIGHTING STRUCTURAL FIRES (FRAME AND MASONRY)	8	5	4	3	2	2
SUBTOTAL	45	29	21	16	10	5

TABLE 8 (CONTINUED)

PERCENT TIME SPENT ON DUTIES BY ENLISTMENT GROUPS

	ENLISTMENT GROUPS					
	1st 1-48 MOS (N=1462)	2nd 49-96 MOS (N=349)	3rd 97-144 MOS (N=211)	4th 145-192 MOS (N=130)	5th 193-240 MOS (N=121)	6th 240+ MOS (N=51)
<u>CATEGORY IV: EQUIPMENT MAINTENANCE DUTIES</u>						
N. SERVICING AND TESTING EQUIPMENT AND INSTALLED SYSTEMS	9	7	6	3	2	1
O. MAINTAINING EQUIPMENT	10	8	5	3	2	1
P. MAINTAINING AND REPAIRING FIRE EXTINGUISHERS	2	4	3	2	1	-
SUBTOTAL	21	19	14	8	5	2
<u>CATEGORY V: AIRCRAFT-RELATED DUTIES</u>						
L. FIGHTING AEROSPACE VEHICLE FIRES	11	7	5	3	2	1
Q. PERFORMING RAMP PATROL DUTIES	1	1	-	-	-	-
S. PERFORMING MAINTENANCE ON RUNWAY BARRIERS	3	2	2	2	1	-
SUBTOTAL	15	10	7	5	3	1
<u>CATEGORY VI: RESCUE DUTY</u>						
M. PERFORMING RESCUE OPERATIONS	6	5	4	4	2	1
SUBTOTAL	6	5	4	4	2	1
TOTAL	100	100	100	100	100	100

TABLE 9

PRIMARY JOBS PERFORMED BY MEMBERS OF EACH ENLISTMENT GROUP

ENLISTMENT GROUPS					
1st	2nd	3rd	4th	5th	6th
1-48 MOS	49-96 MOS	97-144 MOS	145-192 MOS	193-240 MOS	240+ MOS
NOZZLEMAN---					
HYDRANT MAN---					
HANDLINE OPERATOR					
DRIVER-----					
TURRET OPERATOR-----					
RESERVEMAN-----					
FIRE EXTINGUISHER REPAIRMAN-----					
CREW CHIEF-----					
INSTRUCTOR-----					
FIRE INSPECTOR-----					
STATION CHIEF-----					
				NCOIC TECHNICAL SERVICES-----	
				TRAINING NCO-----	
				SUPPLY CUSTODIAN-----	
				DEPUTY FIRE CHIEF-----	
				FIRE CHIEF-----	

ANALYSIS OF DAFSC GROUPS

Similar trends to those found across enlistment groups were also evidenced across DAFSC groups. Generally, respondents holding the 7- and 9-skill level DAFSCs spent most of their time performing supervisory, training, and administrative tasks (Category I) and technical services tasks (Category II.) Five-skill level respondents, on the other hand, spent most of their time performing various technical tasks in the remaining four categories (Categories III thru VI).

Table 10 presents the average amount of time spent by members of each DAFSC group on tasks within each of the duty areas. As with AFMS groups, the duty areas have been grouped into six major categories.

The 5-skill level fire protection specialists, by far the largest group in the career ladder, were primarily involved with firefighting duties. Consistent with the findings discussed in earlier sections, 5-skill level respondents were primarily vehicle drivers, handline operators, nozzlemen, hydrant men, turret operators, and rescuemen. Five-skill level respondents were also found in fire alarm centers and as fire extinguisher maintenance personnel. Over seventy-five percent of their time was spent on such tasks as positioning ladders, performing hose lays, operating turrets, operating and servicing firefighting vehicles, and cleaning station facilities. Generally, 5-skill level respondents performed an average of 100 tasks.

At the 7-skill level, the job of respondents changed from that of firefighter to that of supervisor and trainer. Instead of being drivers, handline operators, or rescuemen, 7-skill levels are assistant chiefs, station chiefs, NCOICs of Technical Services, and instructors and training NCOs. In addition, Fire Inspectors and Supply Custodians are 7-skill level jobs. As respondents progressed from the 5- to the 7-skill level, the percent time spent on tasks within the Supervisory, Training, and Administrative duties (Category I) quadrupled, while the time spent on Technical Services duties (Category II) doubled. Approximately, seventy-five percent of the 7-skill level's job time was spent doing such things as writing APRs, counseling subordinates, planning work assignments, or conducting wet hose drills and egress training. The few technical tasks they performed were related to establishing positions to fight fires; maintaining records, reports, and files; and inspecting for fire hazards or performing technical services. Table 11 presents those tasks which most clearly differentiate between 5- and 7-skill level personnel.

Most of the 9-skill level fire protection superintendents were either fire chiefs or deputy fire chiefs. Typical tasks performed included directing administrative functions, drafting budget estimates, evaluating fire prevention programs, and contacting personnel of civilian communities on mutual aid agreements. Table 12 presents those tasks which most clearly differentiate between 7- and 9-skill level personnel.

In summary, analysis of DAFSC groups clearly reflected the job structure as discussed in the CAREER LADDER STRUCTURE and ANALYSIS OF ENLISTMENT GROUPS sections. Progression within the career ladder clearly moved from that of firefighters/drivers/rescueman to supervisor/trainer and fire inspector to Fire Chief.

TABLE 10

PERCENT TIME SPENT ON DUTIES BY DAFSC GROUPS

	57150 (N=1748)	57170 (N=257)	57190 (N=46)
<u>CATEGORY I: SUPERVISORY, TRAINING, AND ADMINISTRATIVE DUTIES</u>			
A. ORGANIZING AND PLANNING	3	11	20
B. DIRECTING AND IMPLEMENTING	5	20	31
C. EVALUATING	1	6	16
D. TRAINING	4	19	7
H. PREPARING AND MAINTAINING RECORDS, REPORTS, AND FILES	2	4	4
	<u>15</u>	<u>60</u>	<u>78</u>
SUBTOTAL			
<u>CATEGORY II: TECHNICAL SERVICES DUTIES</u>			
R. PERFORMING TECHNICAL SERVICES	2	5	4
E. INSPECTING FOR FIRE HAZARDS	4	7	8
G. INSPECTING FIRE ALARM SYSTEMS, AUTOMATIC INSTALLED SPRINKLER SYSTEMS, AND FIRE PREVENTION DEVICES	2	3	3
	<u>8</u>	<u>15</u>	<u>15</u>
SUBTOTAL			
<u>CATEGORY III: GENERAL FIRE PROTECTION DUTIES</u>			
F. PERFORMING GENERAL FIRE PROTECTION DUTIES	14	4	1
I. PERFORMING FIRE ALARM CENTER DUTIES	14	3	1
J. FIGHTING NATURAL COVER AND MISCELLANEOUS FIRES	4	2	1
K. FIGHTING STRUCTURAL FIRES (FRAME AND MASONRY)	7	3	2
	<u>39</u>	<u>12</u>	<u>5</u>
SUBTOTAL			
<u>CATEGORY IV: EQUIPMENT MAINTENANCE DUTIES</u>			
N. SERVICING AND TESTING EQUIPMENT AND INSTALLED SYSTEMS	8	3	1
O. MAINTAINING EQUIPMENT	9	2	-
P. MAINTAINING AND REPAIRING FIRE EXTINGUISHERS	3	2	-
	<u>20</u>	<u>7</u>	<u>1</u>
SUBTOTAL			
<u>CATEGORY V: AIRCRAFT-RELATED DUTIES</u>			
L. FIGHTING AEROSPACE VEHICLE FIRES	9	2	1
Q. PERFORMING RAMP PATROL DUTIES	1	-	-
S. PERFORMING MAINTENANCE ON RUNWAY BARRIERS	2	1	-
	<u>12</u>	<u>3</u>	<u>1</u>
SUBTOTAL			
<u>CATEGORY VI: RESCUE DUTY</u>			
M. PERFORMING RESCUE OPERATIONS	6	3	-
	<u>6</u>	<u>3</u>	<u>-</u>
SUBTOTAL			
TOTAL	100	100	100

TABLE 11

TASKS WHICH MOST CLEARLY DIFFERENTIATE BETWEEN 5- AND 7-SKILL LEVEL 571X0 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASK	DAFSC 57150	DAFSC 57170	DIFFERENCE
F6 HOOK UP OR UNHOOK HOSES AT FIRE HYDRANTS	62	12	+50
F8 LOAD HOSES OR MAKE HOSE LOAD FINISHES	69	19	+50
F10 OPERATE HAND OR BOOSTER LINES	66	18	+48
N1 BLEED AIR TANKS ON FIREFIGHTING VEHICLES	62	14	+48
F11 OPERATE NOZZLES	66	18	+48
F7 HOOK UP OR UNHOOK HOSES AT WATER TANKERS	56	9	+47
F23 TURN ON OR SHUT OFF FIRE HYDRANTS	61	15	+46
F18 PERFORM STRAIGHT HOSE LAYS	62	16	+46
O3 CLEAN OR MAINTAIN STATION FACILITIES	77	32	+45
N10 SERVICE FIREFIGHTING VEHICLES	65	21	+44
F16 PERFORM REVERSE HOSE LAYS	59	15	+44
J18 FLOOD OR WASH DOWN FUEL SPILLS OR OTHER HAZARDOUS SPILLS	59	15	+44
F1 DRY HOSES	64	21	+43
L10 OPERATE BUMPER TURRETS	57	16	+42
L16 OPERATE OVERHEAD TURRETS	56	14	+42
K3 CARRY, POSITION, RAISE, OR LOWER LADDERS	62	21	+41
F12 OPERATE POWERED WOOD OR MASONARY SAWS	61	20	+41
B36 PREPARE AIRMAN PERFORMANCE REPORTS (APR)	22	73	-51
B4 COUNSEL SUBORDINATES ON PERSONAL OR MILITARY-RELATED PROBLEMS	25	71	-46
D17 CONDUCT WET HOSE DRILLS	16	61	-45
B31 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	20	64	-44
A24 PLAN OR PREPARE BRIEFINGS	18	61	-43
C6 EVALUATE FIREFIGHTING PROCEDURES	14	56	-42
B41 SCHEDULE LEAVES OR PASSES	9	51	-42
B1 CONDUCT SUPERVISORY INDOCTRINATIONS FOR NEWLY-ASSIGNED PERSONNEL	16	58	-42
D26 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	20	61	-41
D8 CONDUCT EGRESS TRAINING FROM AIRCRAFT OR BUILDINGS	17	58	-41

TABLE 12

TASKS WHICH MOST CLEARLY DIFFERENTIATE BETWEEN 7- AND 9-SKILL LEVEL PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASK	DAFSC 57170	DAFSC 57190	DIFFERENCE
C14 EVALUATE STATION OR DEPARTMENT ADMINISTRATIVE PROCEDURES	24	87	-63
B7 DIRECT ADMINISTRATIVE FUNCTIONS	33	94	-61
B30 INITIATE PERSONNEL ACTIONS	35	96	-61
A3 CONTACT PERSONNEL OF CIVILIAN COMMUNITIES ON MUTUAL AID AGREEMENTS	22	82	-60
A11 DRAFT BUDGET ESTIMATES	18	76	-58
B35 PLAN OR CONDUCT STAFF MEETINGS	18	76	-58
A19 ESTABLISH PERSONNEL REQUIREMENTS	27	85	-58
A15 ESTABLISH EQUIPMENT REQUIREMENTS	23	81	-58
C10 EVALUATE JOB DESCRIPTIONS	16	74	-58
B40 PREPARE STAFF STUDIES, SURVEYS, OR SPECIAL REPORTS	21	78	-57
B22 DRAFT OR REVISE JOB DESCRIPTIONS	17	74	-57
C5 EVALUATE FIRE PREVENTION PROGRAMS	25	81	-56
C2 EVALUATE BUDGET ESTIMATES	15	70	-55
B32 INTERVIEW CIVILIAN JOB APPLICANTS	10	65	-55
C7 EVALUATE FIRE STATION FACILITIES	37	91	-54
A5 DEVELOP JOINT FIREFIGHTING OR SAFETY PROCEDURES WITH BASE OPERATIONS PERSONNEL	24	78	-54
B21 DRAFT CORRESPONDENCE	43	96	-53
A30 PREPARE APPROVALS OF BUILDING CONSTRUCTION PLANS MEETING FIRE SAFETY REQUIREMENTS	21	74	-53
A35 SERVE AS MEMBER OF COMMANDERS' COUNCILS	13	65	-52
C13 EVALUATE SAFETY OR SECURITY PROGRAMS	31	83	-52

COMPARISON OF CAREER LADDER DOCUMENTS TO SURVEY DATA

AFR 39-1 Specialty Descriptions

The AFR 39-1 Specialty Descriptions for the 57150/57130, 57170, and 57190 AFSCs were compared against the survey data. Overall, the job descriptions provided an exceptionally accurate general description of actual tasks performed at each of the skill levels.

There were, however, two minor exceptions. First of all, the 57170 description excluded the investigation of fires by 7-skill level fire protection supervisors. Although this job is performed primarily by 9-skill level superintendents, survey data showed approximately 40 percent of the 7-skill level respondents performing related tasks (See Table 13). In addition, the 57190 description did not mention the preparation of fire protection publications or revisions to existing publications, yet over 65 percent of the 9-skill level superintendents responding to the survey indicated they performed these tasks (See Table 13).

Specialty Training Standard (STS)

The current STS for AFSC 571X0, dated 31 May 1975, was reviewed against the survey data. Chanute Technical Training School personnel cross-referenced the STS paragraphs to the current inventory tasks. Each of the STS sub-paragraphs containing task knowledge and performance requirements for the three skill levels were evaluated in terms of the percent members performing related inventory tasks. STS paragraphs containing general information or having only subject knowledge proficiency level requirements were not evaluated. Overall, the STS was found to be accurate in terms of tasks performed by the 3-, 5-, and 7-skill level respondents and the job functions identified in the CAREER LADDER STRUCTURE of this report.

TABLE 13

PROPOSED ADDITIONS TO 571X0 AFR 39-1 SPECIALTY DESCRIPTIONS

<u>PROPOSED ADDITION</u>	<u>RELATED TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>	
		<u>57170</u>	<u>57190</u>
<u>57170 Description Only:</u>			
Conduct technical investigation to determine actual and underlying causes of fire, including potentials of suspected arson or incendiaryism, effectiveness of fire suppression efforts, and estimate of extent and/or cost of damage.	B33 Investigate Accidents of Incidents H11 Prepare Fire Incident Summaries	41 32	N/A N/A
<u>57190 Description Only:</u>			
Prepare fire protection publications, and additions or revisions to existing publications.	A12 Draft Changes for Firefighting or Crash Operation Publications B37 Prepare Base Level 92-Series Publications	N/A N/A	65 74

ANALYSIS OF CONUS/OVERSEAS GROUPS

A comparison was also made between the jobs being performed by CONUS members holding DAFSC 57150 and overseas members holding the same DAFSC. Only minor differences were noted. Slightly more of the overseas personnel were performing supervisory tasks and conducting OJT (See Table 14). In addition, it appears that a few more overseas personnel were engaged in rescue operations.

In terms of background differences, very few differences were noted. The average number of tasks performed by overseas respondents was 107, slightly higher than the 97 tasks performed by CONUS respondents. The job difficulty index computed on the overseas jobs was 5.0 while that for the CONUS jobs was 4.7. Overseas personnel also had an average of eight or nine months more time in the military service and in the career ladder than their CONUS counterparts.

TABLE 14

TASKS WHICH MOST CLEARLY DIFFERENTIATE BETWEEN CONUS AND OVERSEAS PERSONNEL HOLDING DAFSC 57150
(PERCENT MEMBERS PERFORMING)

TASK	CONUS DAFSC 57150 (N=1266)	OVERSEAS DAFSC 57150 (N=485)	DIFFERENCE
I22 OPERATE FIRE STATION DOOR SWITCHES	47	31	16
F15 PERFORM MASTER STREAM OPERATIONS	48	36	12
I16 MONITOR FIRE ALARM SYSTEM RECORDING DEVICES	37	26	11
F6 HOOK UP OR UNHOOK HOSES AT FIRE HYDRANTS	64	53	11
K2 CARRY HOSE LINES UP OR DOWN LADDERS	57	46	11
I1 ALERT FIREFIGHTING CREWS	53	43	10
J18 FLOOD OR WASH DOWN FUEL SPILLS OR OTHER HAZARDOUS SPILLS	61	51	10
D37 WRITE TRAINING REPORTS	39	53	-14
D13 CONDUCT ON-THE-JOB TRAINING (OJT)	28	42	-14
D18 DEMONSTRATE OPERATION OF FIREFIGHTING EQUIPMENT	40	53	-13
B5 DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	22	34	-12
D11 CONDUCT FIRST AID TRAINING	17	29	-12
M1 ADMINISTER FIRST AID	32	43	-11
B31 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	17	28	-11
B17 DIRECT RESCUE OPERATIONS	12	23	-11
B24 IDENTIFY EQUIPMENT FOR REPAIR OR DISPOSAL	25	36	-11
D17 CONDUCT WET HOSE DRILLS	14	24	-10
D8 CONDUCT EGRESS TRAINING FROM AIRCRAFT OR BUILDINGS	15	25	-10
B43 SUPERVISE APPRENTICE FIRE PROTECTION SPECIALISTS (AFSC 57130)	22	32	-10
B6 DEVELOP OR MAINTAIN STATUS BOARDS OR GRAPHS	25	35	-10

ANALYSIS OF TASK DIFFICULTY

From the listing of airmen identified to receive the occupational survey inventory, 120 incumbents from various commands and locations who held a 7- or 9-skill level DAFSC and PAFSC were identified to also receive a task difficulty booklet. This booklet contained only the duty/task list section of the original occupational survey inventory. The survey respondent was instructed to rate all of the tasks on a nine-point scale from extremely low to extremely high, with difficulty being defined as the length of time it requires an average incumbent to learn to do the task. Interrater agreement among the 75 raters who returned booklets was .96. Ratings were adjusted so that tasks of average difficulty have ratings of 5.00.

A listing of representative tasks rated above average in difficulty is given in Table 15. Generally, the tasks rated as above average in difficulty related to supervisory, training, and administrative duties (Category I) and the technical services function (Category II). Also included were several tasks related to runway barrier maintenance, rescue operations, and equipment maintenance.

Table 16 provides a listing of representative tasks rated below average in difficulty. Tasks rated as slightly below average in difficulty included tasks from all six duty categories. These tasks included inspecting wooded or grass fire areas, evaluating suggestion programs, making forcible entries into building, protecting explosive components from heat, and operating CO2 converters. Tasks rated as the least difficult generally related to only two duty areas, general fire protection (Category III) and equipment maintenance (Category IV). These tasks included maintaining fire station logs, servicing firefighting vehicles, removing and replacing fire extinguishers gauges, and operating fire station door switches.

Job Difficulty Index (JDI)

Having computed the task difficulty index for each inventory item, it was then possible to compute a Job Difficulty Index (JDI) for the functional groups identified in the survey analysis. The index provides a relative measure of which jobs, when compared to other jobs identified in the analysis, are more or less difficult. The JDI is based on an equation using number of tasks performed and the average difficulty per unit time spent. The index ranks jobs on a scale of 1 to 25, with the 1 ranking representing very easy jobs and the 25 ranking representing very difficult jobs. The indices are then adjusted so that the average job difficulty index is 13.00. The JDI was computed for the eight major job groups identified in the career ladder structure, and this information is presented in Table 17.

Table 17 clearly reflects several groupings of jobs by difficulty level. Jobs requiring the supervision of personnel, the evaluation of

training and programs, the directing and implementing of plans, programs, and people, the performance of technical service tasks, and the performance of rescue tasks were identified as being the most difficult. Those jobs identified as least difficult involved the operation of vehicles, repair and maintenance of equipment, the performance of basic firefighting tasks, and the performance of dispatcher tasks.

TABLE 15

REPRESENTATIVE TASKS RATED AS ABOVE AVERAGE IN TASK DIFFICULTY

<u>TASK</u>	<u>DIFFICULTY INDEX</u>	<u>PERCENT MEMBERS PERFORMING</u>
A7 DEVELOP MISSILE COMPLEX DISASTER PROCEDURES	7.86	5
A11 DRAFT BUDGET ESTIMATES	7.31	8
D21 DEVELOP COURSE CURRICULA, PLANS OF INSTRUCTION (POI), OR SPECIALTY TRAINING STANDARDS (STS)	7.02	8
B33 INVESTIGATE ACCIDENTS OR INCIDENTS	6.79	13
B17 DIRECT RESCUE OPERATIONS	6.57	10
R21 PLAN OR IMPLEMENT FIRE PREVENTION WEEK PROGRAMS	6.52	19
D4 CONDUCT "BROKEN ARROW" OR DISASTER-TYPE DRILLS	6.36	12
K15 GATHER EVIDENCE TO DETERMINE CAUSES OF FIRES OTHER THAN AEROSPACE OR NATURAL COVER FIRES	6.22	18
E11 INSPECT EXPLOSIVE STORAGE AREAS	6.17	13
A5 DEVELOP JOINT FIREFIGHTING OR SAFETY PROCEDURES WITH BASE OPERATIONS PERSONNEL	6.01	11
H11 PREPARE FIRE INCIDENT SUMMARIES	5.91	11
C8 EVALUATE INDIVIDUALS FOR PROMOTION, DEMOTION, OR RECLASSIFICATION	5.82	13
M13 PERFORM MOUTH-TO-MOUTH RESUSCITATION	5.73	34
S13 PERFORM OPERATIONAL CHECKS OF BARRIER SYSTEMS	5.62	21
G3 INSPECT FIRE ALARM RECEIVING OR RECORDING EQUIPMENT	5.52	18
H2 INSERT CHANGES IN OR ANNOTATE PUBLICATIONS	5.30	14
E8 INSPECT COLD STORAGE OR ICE-MAKING PLANTS	5.15	9
H10 PREPARE FIRE HAZARD REPORTS	5.05	24
J14 EXTINGUISH NATURAL COVER FIRES	5.04	37

TABLE 16

REPRESENTATIVE TASKS RATED BELOW AVERAGE IN TASK DIFFICULTY

<u>TASK</u>	<u>DIFFICULTY INDEX</u>	<u>PERCENT MEMBERS PERFORMING</u>
E3 INSPECT AUTOMOTIVE SERVICE STATIONS	4.97	15
G11 INSPECT MANUAL FIRE ALARM EQUIPMENT	4.85	18
N11 SERVICE RAMP PATROL VEHICLE EXTINGUISHING SYSTEMS	4.70	42
J3 DECONTAMINATE PERSONNEL OR EQUIPMENT	4.58	12
O11 PERFORM OPERATOR MAINTENANCE ON FIREFIGHTING VEHICLE MOUNTED EQUIPMENT	4.44	52
J23 OPERATE WATER TANKERS	4.29	49
I9 MAINTAIN FIRE STATION LOGS	4.14	43
Q7 OPERATE RAMP PATROL VEHICLES	4.00	44
K19 PERFORM BUILDING CLEAN-UP OPERATIONS	3.87	44
L10 OPERATE BUMPER TURRETS	3.77	53
K4 CLIMB UP OR DOWN LADDERS	3.65	59
F18 PERFORM STRAIGHT HOSE LAYS	3.56	58
F8 LOAD HOSES OR MAKE HOSE LOAD FINISHES	3.42	65
I1 ALERT FIREFIGHTING CREWS	3.22	44
N12 TEST FIRE REPORTING TELEPHONES	2.79	39
O3 CLEAN OR MAINTAIN STATION FACILITIES	2.96	72
F6 HOOK UP OR UNHOOK HOSES AT FIRE HYDRANTS	2.62	58
F1 DRY HOSES	2.34	60
F23 TURN ON OR SHUT OFF FIRE HYDRANTS	2.22	58
P23 STENCIL NUMBERS ON FIRE EXTINGUISHERS	1.99	13

TABLE 17

JOB DIFFICULTY INDICES FOR CAREER LADDER GROUPS

<u>GROUPS</u>	<u>JOB DIFFICULTY INDEX</u>
I. ASSISTANT OR DEPUTY FIRE CHIEFS AND STATION CHIEFS	17.9
II. ASSISTANT CHIEFS OF TRAINING	14.5
III. FIRE INSPECTORS AND TECHNICAL SERVICES NCOICs	16.0
IV. TECHNICAL SCHOOL INSTRUCTORS	11.5
V. EXTINGUISHERS MAINTENANCE PERSONNEL	8.1
VI. AEROSPACE/STRUCTURAL FIREFIGHTERS AND CRASH/RESCUEMEN	13.1
VII. FIRE ALARM CENTER PERSONNEL	7.4
VIII. SUPPLY CUSTODIANS	11.0

COMPARISON TO PREVIOUS SURVEYS

The results of this survey were compared to those of the two previous Fire Protection occupational surveys. As mentioned earlier, the career ladder has remained relatively stable over the years, with no major classification changes being made. Thus, the results of this survey did not vary greatly from the results of the two previous surveys.

Table 18 shows the comparison of job groups identified in both the 1972 and 1978 surveys. As shown, the groups were almost identical. However, the 1972 study identified Airborne Firefighters while the 1978 study did not. In addition, the 1978 study reported a group of supply custodians which did not show up in the 1972 study. Also, the present study identified an Aerospace/Structural Firefighters and Crash/Rescuemen cluster while the 1972 study broke this down into nine separate groups. These nine groups were also identified in the present study but were not reported separately.

In terms of career progression, the two surveys reported very similar findings. In 1972, fire protection personnel were involved with structural and aerospace firefighting through the third enlistment. At the fourth enlistment period, they changed from a fireman status to that of supervisor. At the sixth enlistment point, they were supervisors or managers. This follows very closely to the progression described in the ANALYSIS OF ENLISTMENT GROUPS section of this report.

TABLE 18

COMPARISON OF JOB GROUPS IDENTIFIED IN 1972 AND 1978 STUDIES

1972 JOB GROUPS	1978 JOB GROUPS
I. FIRE CHIEFS AND ASSISTANT CHIEFS	I. ASSISTANT OR DEPUTY FIRE CHIEFS AND STATION CHIEFS
II. TRAINING CHIEFS NCOs	II. ASSISTANT CHIEFS OF TRAINING
III. TECHNICAL SERVICES SPECIALISTS	III. TECH SCHOOL INSTRUCTORS
IV. FIRE EXTINGUISHER REPAIRMEN	IV. FIRE INSPECTORS AND TECHNICAL SERVICES NCOICs
V. CREW CHIEFS	V. EXTINGUISHER MAINTENANCE PERSONNEL
VI. FIRE PROTECTION SPECIALISTS	VI. AEROSPACE/STRUCTURAL FIRE FIGHTERS AND CRASH/RESCUEMEN
VII. AEROSPACE VEHICLE FIREFIGHTERS	
VIII. STRUCTURAL FIREFIGHTERS	
IX. RUNWAY BARRIER MAINTENANCE SPECIALISTS	
X. EQUIPMENT DRIVER-OPERATORS	
XI. EQUIPMENT MAINTENANCE SPECIALISTS	
XII. APPRENTICE HANDLINEMEN	
XIII. APPRENTICE AEROSPACE VEHICLE FIREFIGHTERS	
XIV. FIRE ALARM CENTER SPECIALISTS	VII. FIRE ALARM CENTER PERSONNEL
XV. AIRBORNE FIREFIGHTERS	VIII. SUPPLY CUSTODIANS

DISCUSSION

From this analysis of the Fire Protection career ladder, it was found that, over the years, the career ladder has remained relatively stable in terms of jobs and tasks performed by incumbents in the field. Since 1968, this ladder has been surveyed three times, with highly similar findings being reported in all three studies. The career ladder structure that emerged from these three analyses tend to validate the existing classification structure for AFS 571X0 personnel.

In general, the members within this career ladder are young airmen, as evidenced by the fact that 63 percent of our sample are in their first enlistment. The primary job of these young airmen is that of fighting various types of fires, from structural, aerospace vehicle, and natural cover fires, to hazardous material fires. Many also perform rescue tasks, fire alarm center dispatcher tasks, and fire extinguisher maintenance tasks. During firefighting operations, these incumbents will primarily serve as vehicle drivers, handline operators, hydrant men, nozzle men, and turret operators. Experienced fire protection incumbents were found performing as crew chiefs, instructors, fire inspectors, and station chiefs.

Career ladder documents such as the AFR 39-1 Specialty Descriptions and Specialty Training Standard (STS) were found to be excellent supporting documents. Both documents were exceptionally accurate in terms of describing the tasks performed by skill level groups and the jobs identified in the career ladder structure analysis.

APPENDIX A

REPRESENTATIVE TASKS PERFORMED BY ASSISTANT OR DEPUTY FIRE CHIEFS AND STATION CHIEFS

TASK	PERCENT MEMBERS PERFORMING
B4 COUNSEL SUBORDINATES ON PERSONAL OR MILITARY-RELATED PROBLEMS	94
B36 PREPARE AIRMAN PERFORMANCE REPORTS (APR)	93
B31 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	89
B5 DEVELOP OR IMPROVE WORK METHODS OR PROCEDURES	87
A1 ASSIGN PERSONNEL TO DUTY POSITIONS	87
B8 DIRECT AIRCRAFT CRASH FIRE OPERATIONS	85
B17 DIRECT RESCUE OPERATIONS	84
A26 PLAN OR SCHEDULE WORK ASSIGNMENTS	83
A21 ESTABLISH WORK PRIORITIES	83
B13 DIRECT FIREFIGHTING OPERATIONS FOR STRUCTURAL FIRES	83
C6 EVALUATE FIREFIGHTING PROCEDURES	82
B1 CONDUCT SUPERVISORY INDOCTRINATIONS FOR NEWLY-ASSIGNED PERSONNEL	82
C3 EVALUATE COMPLIANCE WITH WORK STANDARDS	81
B2 CONDUCT SUPERVISORY ORIENTATIONS OF NEWLY-ASSIGNED PERSONNEL	80
D17 CONDUCT WET HOSE DRILLS	80

REPRESENTATIVE TASKS PERFORMED BY ASSISTANT CHIEFS OF TRAINING

TASK	PERCENT MEMBERS PERFORMING
D26 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	98
D25 EVALUATE TRAINING METHODS, TECHNIQUES, OR PROGRAMS	96
D17 CONDUCT WET HOSE DRILLS	91
D24 ESTABLISH TRAINING REQUIREMENTS	89
D8 CONDUCT EGRESS TRAINING FROM AIRCRAFT OR BUILDINGS	89
D37 WRITE TRAINING REPORTS	89
D20 DEVELOP BRIEFINGS OR TRAINING AIDS	89
D34 SELECT OR ASSIGN INSTRUCTORS	87
D13 CONDUCT ON-THE-JOB TRAINING (OJT)	81
D5 CONDUCT BURNING PIT EXERCISES	79
D33 PREPARE TRAINING REQUIREMENTS REQUESTS	77
D35 SUPERVISE TRAINING COURSES	72
D28 PLAN OR SCHEDULE OJT PROGRAM	70

REPRESENTATIVE TASKS PERFORMED BY FIRE INSPECTORS AND TECHNICAL SERVICES NCOICS

TASK	PERCENT MEMBERS PERFORMING
H10 PREPARE FIRE HAZARD REPORTS	91
E41 PERFORM FOLLOW-UP INSPECTIONS	87
E31 INSPECT REPAIR SHOPS SUCH AS HANGERS, CE SHOPS, OR AUTOMOTIVE SHOPS	85
G4 INSPECT FIRE GUARDS SUCH AS FIRE DOORS, WALLS, OR CURTAINS	84
R16 MAINTAIN FACILITY FOLDERS	82
G11 INSPECT MANUAL FIRE ALARM EQUIPMENT	82
E29 INSPECT PUBLIC USE BUILDINGS SUCH AS THEATERS, CHAPELS, OR RECREATIONAL BUILDINGS	82
A33 SCHEDULE FIRE PREVENTION INSPECTIONS	81
R18 PERFORM FOLLOW-UP ON FIRE HAZARD INSPECTION REPORT FORMS (AF FORM 1487)	81
G1 INSPECT AUTOMATIC FIRE ALARMS OR TRANSMITTING DEVICES	80
E9 INSPECT COMMUNICATIONS FACILITIES	79
D2 BRIEF PERSONNEL ON FIRE PREVENTION OR FIRE SAFETY	77
E3 INSPECT AUTOMOTIVE SERVICE STATIONS	77
E38 INSPECT WAREHOUSE AREAS OR DOCKS	77
H12 PREPARE RECOMMENDATIONS FOR CORRECTING FIRE PREVENTION DISCREPANCIES	76
R12 INSTRUCT PUBLIC ASSEMBLY PERSONNEL IN FIRE REPORTING	74
R13 INSTRUCT PUBLIC ASSEMBLY PERSONNEL IN USE OF FIRE EXTINGUISHERS	74
E37 INSPECT TROOP HOUSING AREAS OR BUILDINGS	73

REPRESENTATIVE TASKS PERFORMED BY TECHNICAL SCHOOL INSTRUCTORS

TASK	PERCENT MEMBERS PERFORMING
D1 ADMINISTER OR SCORE TESTS	92
D36 WRITE TEST QUESTIONS	83
D26 MAINTAIN TRAINING RECORDS, CHARTS, OR GRAPHS	83
D32 PREPARE LESSON PLANS	75
D19 DEMONSTRATE PROCEDURES FOR LOCATING TECHNICAL INFORMATION	67
D15 CONDUCT RESIDENT TECHNICAL TRAINING COURSES	58
D25 EVALUATE TRAINING METHODS, TECHNIQUES, OR PROGRAMS	58
D20 DEVELOP BRIEFINGS OR TRAINING AIDS	58
D21 DEVELOP COURSE CURRICULA, PLANS OF INSTRUCTION (POI), OR SPECIALTY TRAINING STANDARDS (STS)	42

REPRESENTATIVE TASKS PERFORMED BY EXTINGUISHER MAINTENANCE PERSONNEL

TASK	PERCENT MEMBERS PERFORMING
P11 REMOVE OR REPLACE FIRE EXTINGUISHER GAUGES	100
P22 SERVICE PRESSURIZED WATER EXTINGUISHERS	98
P2 INSTALL SAFETY PIN DISPLAY SEALS	98
P4 MAINTAIN EXTINGUISHER RECORDS	98
P15 REMOVE OR REPLACE HOSES, HORNS, OR NOZZLES ON FIRE EXTINGUISHERS	98
P18 REMOVE OR REPLACE VALVE ASSEMBLIES ON EXTINGUISHERS	98
P5 PAINT FIRE EXTINGUISHERS	96
P6 PAINT EXTINGUISHER CARTS	96
P20 SERVICE DRY POWDER EXTINGUISHERS	96
P8 REMOVE OR REPLACE DAMAGED CARTS	96
P19 REMOVE, REPLACE, OR REPAIR EXTINGUISHER CART TIRES	96
P23 STENCIL NUMBERS ON FIRE EXTINGUISHERS	95
P12 REMOVE OR REPLACE FLUORESCENT TAPE	95
P10 REMOVE OR REPLACE EXTINGUISHER CARTRIDGES	95
P1 INSTALL FIRE EXTINGUISHERS	93
P17 REMOVE OR REPLACE SAFETY DISCS	93
P7 RECHARGE CO2 FIRE EXTINGUISHERS	91
P9 REMOVE OR REPLACE DISCHARGE LEVERS	91

REPRESENTATIVE TASKS PERFORMED BY AEROSPACE/STRUCTURAL FIREFIGHTERS AND CRASH/RESCUEMEN

TASK	PERCENT MEMBERS PERFORMING
O3 CLEAN OR MAINTAIN STATION FACILITIES	92
F8 LOAD HOSES OR MAKE HOSE LOAD FINISHES	89
F10 OPERATE HAND OR BOOSTER LINES	84
F11 OPERATE NOZZLES	84
F2 DRIVE FIREFIGHTING VEHICLES	83
N10 SERVICE FIREFIGHTING VEHICLES	83
F1 DRY HOSES	81
K4 CLIMB UP OR DOWN LADDERS	80
M10 OPERATE SELF-CONTAINED BREATHING APPARATUS	80
K3 CARRY, POSITION, RAISE, OR LOWER LADDERS	80
F23 TURN ON OR SHUT OFF FIRE HYDRANTS	79
F6 HOOK UP OR UNHOOK HOSES AT FIRE HYDRANTS	79
F16 PERFORM REVERSE HOSE LAYS	76
F12 OPERATE POWERED WOOD OR MASONRY SAWS	76
F20 POSITION OR OPERATE SMOKE EJECTORS	72
L16 OPERATE OVERHEAD TURRETS	71
K2 CARRY HOSE LINES UP OR DOWN LADDERS	70
O9 REMOVE OR REPLACE DISCHARGE LEVERS	68
K18 OPERATE STRUCTURAL FIREFIGHTING VEHICLES	67
N8 PRESSURE TEST FIRE HOSES	66
O6 PERFORM MAINTENANCE ON HOSES	65
M7 OPERATE PORTABLE POWER METAL SAWS	64
L11 OPERATE ENGINE CONTROLS	62

REPRESENTATIVE TASKS PERFORMED BY FIRE ALARM CENTER PERSONNEL

TASK	PERCENT MEMBERS PERFORMING
I2 DISPATCH FIREFIGHTING VEHICLES	100
I1 ALERT FIREFIGHTING CREWS	99
I9 MAINTAIN FIRE STATION LOGS	98
I25 OPERATE TWO-WAY RADIOS	98
I23 OPERATE INTERCOM SYSTEMS	97
I3 INFORM CREWS OF LOCATIONS AND NATURE OF FIRES	97
I27 RECEIVE, TRANSMIT, OR RECORD ADMINISTRATIVE CALLS	95
I28 RECORD INCOMING FIRE CALLS	95
I19 NOTIFY STAFF SECTIONS OF EMERGENCIES	93
I26 READ OR INTERPRET SYMBOLS ON MAPS OR CHARTS	93
I12 MAINTAIN OFF-DUTY PERSONNEL RECALL ROSTERS	93
I11 MAINTAIN MUNITIONS LOCATION CHARTS AND TYPE SYMBOLS	92
I24 OPERATE TELEPHONE SWITCHBOARDS	89
I10 MAINTAIN LISTS OF CLOSED BUILDINGS	89
I5 MAINTAIN CHARTS OF LOCATIONS OF HIGH FIRE HAZARD	88
I8 MAINTAIN FIREFIGHTING VEHICLE STATUS BOARDS	86
I15 MONITOR AREA FIRE STATION RADIO FREQUENCIES	85
I7 MAINTAIN FIRE ALARM RESPONSE CHARTS	84
I16 MONITOR FIRE ALARM SYSTEM RECORDING DEVICES	82

REPRESENTATIVE TASKS PERFORMED BY SUPPLY CUSTODIANS

TASK	PERCENT MEMBERS PERFORMING
B9 DIRECT EQUIPMENT STORAGE OR ISSUE	94
A2 CONDUCT INVENTORIES OF SUPPLIES OR EQUIPMENT	94
B39 PREPARE REQUISITIONS FOR EQUIPMENT OR SUPPLIES	88
B24 IDENTIFY EQUIPMENT FOR REPAIR OR DISPOSAL	88
A27 PLAN PROCEDURES FOR MAINTAINING STOCK LEVELS	88
A11 DRAFT BUDGET ESTIMATES	82
C2 EVALUATE BUDGET ESTIMATES	71
O4 MAINTAIN EXTINGUISHER RECORDS	53
C16 EVALUATE TOOL OR EQUIPMENT MAINTENANCE	53
A15 ESTABLISH EQUIPMENT REQUIREMENTS	53